

Abstract

A filter for trapping, sterilizing, and decomposing organic matter, bacteria, viruses, and other harmful substances is provided at low cost and extremely high efficiency. A semiconductor material having a light emitting function is formed in the interior or on the surface of a porous ceramic material substrate by deposition from a suspension of semiconductor particles, and an electrode provided to serve as a filter. Voltage is applied so that ultraviolet light is emitted while a fluid is being filtered, and any harmful substances are filtered and simultaneously sterilized and decomposed.